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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/685,881	10/14/2003	Dong-Hwan Shin	006331.P008	5937

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EXAMINER
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MORAN, RANDAL D

ART UNIT	PAPER NUMBER
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2196

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/19/2006	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	Application No. 10/685,881	Applicant(s) SHIN ET AL.	
	Examiner Randal D. Moran	Art Unit 2196	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 14 October 2003.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

1. Claims 1-13 are pending in the application.

### *Claim Objections*

2. **Claims 1, 2, 9, and 10** are objected to because of the following informalities:

There is incorrect grammar within the claims.

- Considering **Claim 1**, the examiner will treat line 1: "inserting an information" as "inserting information", line 4: "converting an analog audio data" as "converting analog audio data", line 5: "into a digital audio data" as into digital audio data."
- Considering **Claim 2**, the examiner will treat lines 2-3: "inserting an information" as "inserting information."
- Considering **Claim 9**, the examiner will treat line 1: "inserting an information" as "inserting information", line 3: "converting an analog audio data" as "converting analog audio data", lines 3-4: "into a digital audio data" as into digital audio data."
- Considering **Claim 10**, the examiner will treat line 2: "inserting an information" as "inserting information."

Appropriate correction is required.

***Claim Rejections - 35 USC § 101***

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claim 6 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claim lends itself to functional descriptive material. An apparatus with a software program does not fall into the realm of a computer readable medium containing a software program, which produces a tangible result and is therefore non-statutory. See MPEP 2106.01.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. **Claims 1, 4, 9, and 12** are rejected under 35 U.S.C. 102(b) as being anticipated by **Terui et al. (US 5,713,813)**, herein after "Terui."

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7. Considering **Claim 1**, Terui discloses inserting information for preventing forgery or alteration of audio data into the audio data which is stored in DVR (Digital Voice Recorder) (column 6 lines 55-65, Fig. 1- item 7), said DVR comprises an audio data input unit (Fig. 1- item 1), A/D converter converting analog audio data from said audio data input unit into digital audio data (Fig. 1- item 3), and a data storage unit storing said digital audio data (Fig. 1- item 8 and item 11), wherein said forgery or alteration prevention apparatus receives said digital audio data from said A/D converter (column 6 lines 55-65, Fig. 1- item 7, Fig. 5), and inserts said information for preventing forgery or alteration into said digital audio data before storing said digital audio data in said data storage unit (column 6 lines 55-65, Fig. 1- item 7).
8. Considering **Claim 9**, Terui discloses (a) receiving said digital audio data from A/D converter (column 6 lines 55-65, Fig. 1- item 7, Fig. 5); (b) inserting said information for preventing forgery or alteration into said digital audio data in real time (column 6 lines 55-65, Fig. 1- item 7); and (c) storing said digital audio data into which said information for preventing forgery or alteration is inserted in said data storage unit (column 6 lines 55-65, Fig. 1- item 7).
9. Considering **Claims 4 and 12**, Terui discloses the insertion of said information for preventing forgery or alteration is carried out by encrypting said digital audio data by predetermined encryption key (column 6 lines 55-65, Fig. 1- item 7).

10. Considering **Claim 6**, Terui discloses apparatus is implemented within the digital voice recorder in the form of general PCB board, DSP chipboard, FPGA (Flexible Program Gate Array) board, ASIC (Application Specific Integrated Circuit) board, or software programs.

It is inherent that the circuitry for the digital voice recorder would be in the form of general PCB board, DSP chip board, FPGA (Flexible Program Gate Array) board, ASIC (Application Specific Integrated Circuit) board, or software programs.

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. **Claims 2, 5, 10 and 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Terui** in view of **Kaplan (US 2002/0023220)**, herein after "Kaplan".

13. Considering **Claim 2**, Terui discloses a system for receiving a digital audio data stored in DVR (column 6 lines 55-65, Fig. 1- item 7), a forgery or alteration

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prevention apparatus for inserting information for preventing forgery or alteration of said digital audio data (column 6 lines 55-65, Fig. 1- item 7, Fig. 5)

Terui does not disclose storing said digital audio data in PC; and wherein said forgery or alteration prevention apparatus is provided in said PC, and inserts said information for preventing forgery or alteration into said digital audio data before storing said digital audio data in a data storage unit in said PC.

Kaplan does disclose storing said digital audio data in PC ([0063] lines 13-20, [0075] lines 5-8); and wherein said forgery or alteration prevention apparatus is provided in said PC ([0063] lines 13-20, [0075] lines 5-8, [0064]), and inserts said information for preventing forgery or alteration into said digital audio data before storing said digital audio data in a data storage unit in said PC ([0063] lines 13-20, [0075] lines 5-8, [0064]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Terui by the forgery and alteration prevention apparatus and storage provided in the PC as taught by Kaplan in order to be able to accommodate the audio and/or video files that may be also generated from a computer system (Kaplan- [0063] lines 19-20).

14. Considering **Claim 10**, Terui discloses (a) receiving said digital audio data stored in said DVR (column 6 lines 55-65, Fig. 1- item 7, Fig. 5); (b) inserting said

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information for preventing forgery or alteration into said digital audio data in real time (column 6 lines 55-65, Fig. 1- item 7).

Terui does not disclose storing said digital audio data into which said information for preventing forgery or alteration is inserted in said PC.

Kaplan does disclose storing said digital audio data into which said information for preventing forgery or alteration is inserted in said PC ([0063] lines 13-20, [0075] lines 5-8, [0064]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Terui by the storage for the digital audio is provided in the PC as taught by Kaplan in order to be able to accommodate the audio and/or video files that may be also generated from a computer system (Kaplan- [0063] lines 19-20).

15. Considering **Claims 5 and 13**, Terui does not disclose the insertion of said information for preventing forgery or alteration is carried out by inserting hash value of said digital audio data into said digital audio data, and the confirmation of whether said stored digital audio data has been forged or altered is carried out by confirming whether the hash value newly obtained by applying said stored digital audio data to a hash function used for obtaining said hash value is identical to the hash value inserted in said stored digital audio data.

Kaplan does disclose the insertion of said information for preventing forgery or alteration is carried out by inserting hash value of said digital audio data into said



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digital audio data ([0064]-[0065] lines 1-7), and the confirmation of whether said stored digital audio data has been forged or altered is carried out by confirming whether the hash value newly obtained by applying said stored digital audio data to a hash function used for obtaining said hash value is identical to the hash value inserted in said stored digital audio data ([0066] lines 1-10).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Terui by the hashing unit as taught by Kaplan in order to provide a digital fingerprint where it is very difficult and probably impossible to construct a counterfeit digital fingerprint that when passed through the same cryptographic hash function would yield the exact same digital fingerprint produced from the authentic digital fingerprint and the same cryptographic hash function (Kaplan- [0066] lines 1-4).

16. **Claims 3, 7, 8 and 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Terui** in view of **Hayashi et al. (EP 0 933 920 A2)**, herein after "Hayashi".

17. Considering **Claims 3 and 11**, Terui does not disclose the insertion of said information for preventing forgery or alteration is carried out by embedding watermark into said digital audio data, and the confirmation of whether said stored digital audio data has been forged or altered is carried out by detecting said watermark.

Hayashi does disclose the insertion of said information for preventing forgery or alteration is carried out by embedding watermark into said digital audio data ([0010], Fig. 10- item 1004, [0089], [0090]), and the confirmation of whether said stored digital audio data has been forged or altered is carried out by detecting said watermark (it is inherent that after embedding a watermark into digital audio data, to detect said watermark in order to sure data integrity).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Terui by the watermarking of the audio input data as taught by Hayashi in order to in order to ensure that audio or an image is authentic and has not been altered. Watermarks serve as a way to protect copyrights on multimedia data (Hayashi- [0007]).

18. Considering **Claim 7**, Terui does not disclose watermark is one of robust watermark or semi-fragile watermark, and the embedment of said watermark is carried out before the compression of said digital audio data.  
Hayashi does disclose watermark is one of robust watermark or semi-fragile watermark, and the embedment of said watermark is carried out before the compression of said digital audio data ([0015], [0090]-[0092], [0120], Fig 10- item 1003-1005).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Terui by the watermarking of the audio input data as taught by Hayashi in order to in order to ensure that audio or

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an image is authentic and has not been altered. Watermarks serve as a way to protect copyrights on multimedia data (Hayashi- [0007]). Whether to embed digital watermark information in input image data after it is compressed or to compress the data after digital watermark is embedded in it can be selected (Hayashi- [0120] lines 1-3). This allows proper image processing in consideration of the compatibility between the digital watermark information embedding scheme and the compression scheme (Hayashi- [0120] lines 3-4).

3. Considering **Claim 8**, Terui does not disclose watermark is fragile watermark; and the embedment of said watermark is carried out after the compression of said digital audio data.

Hayashi does disclose watermark is fragile watermark; and the embedment of said watermark is carried out after the compression of said digital audio data ([0015], [0090]-[0092], [0120], Fig 10- item 1003-1005).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Terui by the watermarking of the audio input data as taught by Hayashi in order to in order to ensure that audio or an image is authentic and has not been altered. Watermarks serve as a way to protect copyrights on multimedia data (Hayashi- [0007]). Whether to embed digital watermark information in input image data after it is compressed or to compress the data after digital watermark is embedded in it can be selected (Hayashi- [0120] lines 1-3). This allows proper image processing in consideration

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of the compatibility between the digital watermark information embedding scheme and the compression scheme (Hayashi- [0120] lines 3-4).

### ***Conclusion***

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- US 6,275,599 – watermarking before and after image compression.
- US 6,212,097 – digital audio recorder with encryption.

30. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Randal D. Moran whose telephone number is 571-270-1255. The examiner can normally be reached on M-F: 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nabil El-Hady can be reached on 571-272-3963. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Randal D. Moran

RDM

12/8/2006



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